

Amendments to the Drawings:

The attached sheets of drawings include changes to FIGS. 2, 3, 4, and 6. These sheets which include FIGS. 2 – 6, replace the original sheets which include FIGS. 2 – 6. In FIGS. 2, 3, 4 and 6 changes have been made as described below.

Attachment: 4 Replacement Sheets

REMARKS/ARGUMENTS

Drawing Objections

Examiner has objected to the drawings under 37 CFR 1.83(a) stating that the drawings must show every feature of the invention specified in the claims. Specifically, Examiner states:

The "piping" and "programmed" feature set forth in claims 26, 32 and 40, and "computer components" set forth in claims 28 and 34, must be shown or the feature(s) cancelled from the claim(s). No new matter should be entered.

Regarding the "piping", Applicant submits that the drawings as filed clearly show the "piping". However, to clarify the drawings even further Applicant has amended the drawings and specification to refer to the piping as "spa piping 71". No new matter has been added.

Regarding the "programmed" feature, the specification clearly states on page 4 under the heading "First Preferred Embodiment":

...(i)n a preferred embodiment, spa controller 12 contains a CPU that is programmed to maintain the temperature of the water in spa tub 7 and the water in spa piping 71 in an optimum operating range...

However, to further clarify the drawings, Applicant has amended FIGS. 2 and 3 to indicate spa controller 12 includes a programmable CPU. No new matter has been added.

Regarding the "computer components", Applicant has cancelled this feature from the claims.

Specification Objection

Examiner has objected to the specification as failing to provide proper antecedent basis for the claimed subject matter. Specifically, Examiner states:

Proper antecedent basis for the "heating element" set forth in Claims 26, 32 and 40, and "mounted so as to be affected" language set forth in Claims 28 and 34, could not be found in the specification.

In response, Applicant has amended the claims so that the specification provides proper antecedent basis for the claimed subject matter.

Claim Rejections

35 USC 112

Examiner has rejected Claims 26, 28 – 32, 34 – 37 and 39 – 41 under 35 USC 112 as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically, Examiner states,

Claim 26 recites a “covered” ambient air temperature sensor. Claims 32 and 40 recite similar subject matter. ... [Claim 41] recites “said ambient air temperature sensor is covered to avoid sensing radiant energy generated by the sun.” This subject matter is not found in the originally filed disclosure and is therefore considered new matter.

In response, Applicant has amended the claims so that they refer only to subject matter found in the originally filed disclosure.

Claim Rejections

35 USC 103(a)

Examiner has rejected Claims 26, 28, 29, 32, 34, and 35 and 39 – 41 as being unpatentable over Hancock and Lively. Specifically, Examiner states

The Hancock reference (Fig. 10) discloses a control system comprising: a spa 60 including water W, piping (Fig. 2); a heating element 200; a water pump 35a; an ambient air temperature sensor 204; a controller (Fig. 10); and a blower 36. Therefore, Hancock teaches all claimed elements except for the controller being a computer.

In response, Applicant respectfully disagrees with Examiner’s characterization of thermostat 204 as “an ambient air temperature sensor”. On Column 18, lines 4 – 11, Hancock states:

Thermostats 44, 45, 46 and 204 are located within the spa heater and near the spa equipment with the setting for thermostat 204 being somewhat above freezing and most probably between 60.degree. F. and 90.degree. F. Thermostat 44 may be set to 96.degree. F.; that of thermostat 45, at

99.degree. F. and that of thermostat 46, at 102.degree. F., for example, to be determined by the spa owners temperature reference.

Clearly, a thermostat that is located "within the spa heater" is measuring the temperature of the water that is within the spa heater. The practice of measuring the temperature of the water in the heater is well known and commonly practiced in the prior art. Indeed, Applicant discusses in detail on page 2 the utilization of prior art temperature sensor 5 mounted on the heater. Temperature sensor 5 measures the temperature of the heater shell. Due to thermal conduction, the temperature of the heater shell is approximately equal to the temperature of the water inside the heater. For example, Applicant states on page 2,

Likewise, in the prior art, when sensor 5 senses a plumbing temperature less than a preset temperature (for example, 40 deg. F.), it will cause spa controller 11 to turn on heater 9 and water pump 13. Hot water is then pumped back into spa tub 7. Heater 9 and water pump 13 will remain on until sensor 5 reports a temperature greater than the preset temperature (i.e., 40 deg. F.).

It is further apparent that Hancock never contemplates an ambient air temperature sensor by referring to his later references to thermostat 204. For example, on Column 18, lines 46 - 56, Hancock states:

Thus, if the on/off switch 207 within the heater is on (contacts closed) and if the water temperature is lower than the heater thermostat setting for thermostat 204, the relay 47 coil 47b is energized. Electrical power is then provided through the normally closed contacts of high limit switches 210, to the heating element 200, also energizing indicator lamp 200 a in parallel therewith. The thermostat 204 within the heater should be set by the spa owner to the lowest setting desired within the range disclosed above. (emphasis added)

Clearly, thermostat 204 is a water temperature sensor. Furthermore, there is no other discussion of an air temperature sensor in Hancock or any other reference cited by Examiner. Therefore, the above rejected claims should be allowable.

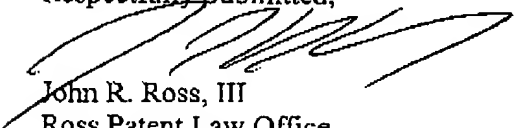
Claims 30 and 31

Examiner has rejected Claims 30 and 31 under 35 USC 103(a) as being unpatentable over Hancock and Lively, and further in view of Tompkins. These claims should be allowable for the reasons stated above.

CONCLUSION

Thus, for all the reasons given above, this application, as the claims are presently limited, define a novel, patentable, and truly valuable invention. Hence allowance of all outstanding claims is respectfully submitted to be proper and is respectfully solicited.

Respectfully Submitted,



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